

a) For Elective I – Student can choose any one subject

Code

Subject Name

90000011 Applied Mathematics

90000012 Business Economics

90000013 Physical Biology (Botany & Zoology)

90000014 Entrepreneurship

90000015 Psychology

Elective 1 : Applied Mathematics - 1st Year
(Subject code : 90000011)

Theory	Practical
<p>Detailed Syllabus: 1.0. Trigonometric ratios 1.1. Angles & its measurements 1.2. Trigonometric ratios 1.3. Relation between degree and radian. 1.4. Fundamental identities. 1.5. Examples based on Fundamental Identities 1.6. Trigonometric ratios of compound angles 1.7. Factorization formulae 1.8. Inverse trigonometric functions 1.9. Properties of a Triangle</p>	<p>Detailed Syllabus: Solve problems on: 1) Conversion of radian to degree 2) Conversion of degree to radian</p>
<p>2.0. Plane co-ordinate geometry 2.1. Locus 2.2. Line</p>	
<p>3.0 Vectors and Linear Equalities 3.1. Definition of vector, position vector 3.2. Algebra of vectors (Equality, addition, subtraction and scalar multiplication) 3.3. Dot (Scalar) product with properties. 3.4. Vector (Cross) product with properties. 3.5. Solutions of Linear inequalities in one variable and two variables</p>	
<p>4.0. Determinants and Matrices 4.1. Definition and expansion of determinants of order 2 and 3. 4.2. Cramer's rule to solve simultaneous equations in 2 and 3 unknowns 4.3. Definition of a matrix of order $m \times n$. 4.4. Types of matrices. 4.5. Algebra of matrices such as equality, addition, Subtraction, scalar multiplication and multiplication. 4.6. Transpose of a matrix. 4.7. Minor, cofactor of an element of a matrix, adjoint Of matrix and inverse of matrix by adjoint method. 4.8. Solution of simultaneous equations containing 2 and 3 unknowns by matrix inversion method.</p>	<p>Solve problems on Cramer's rule</p>
<p>5.0 Statistics and Probability 5.1. Measure of dispersion; mean deviation, variance and standard deviation of ungrouped/grouped data. 5.2. Analysis of frequency distributions with equal means but different variances. 5.3. Random experiments: outcomes, sample spaces (set representation). 5.4. Events: occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events 5.5. Probability of an event, probability of 'not', 'and' & 'or' events.</p>	<p>State and prove Baye's theorem</p>
<p>6.0. Set Relations & Functions 6.1. Types of functions 6.2. Domain, Co – domain, Range of a function 6.3. Composite and Inverse functions 6.4. Graphs of functions</p>	<p>Solve problems on Graphs</p>

<p>7.0. Logarithms 7.1. Introduction and Definition 7.2. Laws of logarithms 7.3. Numerical problems based on multiplication, division and power.</p>	Solve problems on power law
<p>8.0. Complex Numbers and Quadratic equations 8.1. Complex Numbers in the form of $a+ib$ 8.2. Modulus, Complex conjugate, Argument of complex numbers 8.3. Algebra of complex numbers 8.4. Square root of complex numbers 8.5. Argand diagram 8.6. Nature of roots 8.7. Sum and product of roots 8.8. Formation of quadratic equation 8.9. Symmetric functions of roots 8.10. Cube roots of unity</p>	
<p>9.0. Sequences and Series 9.1. Definition of a sequence 9.2. Geometric Progression and Arithmetic Progression 9.3. Arithmetic mean, Geometric mean, harmonic mean 9.4. Special Series</p>	<p>1) Proof of arithmetic progression and geometric progression 2) Proof of arithmetic mean and geometric mean</p>
<p>10.0 Permutations and Combinations 10.1. Factorial notation 10.2. Fundamental principle of counting 10.3. Permutation 10.4. Combinations</p>	
<p>11.0 Mathematical Induction and binomial theorem 11.1. History, statement, Proof of Binomial theorem for positive integral indices, Pascal's triangle, general and middle term in binomial expansion 11.2. Principle of mathematical induction and it's application 11.3. Simple applications</p>	Proof of Binomial theorem

Elective 1 : Applied Mathematics - 2 nd Year
(Subject code : 9000011)

Theory	Practical
Detailed Syllabus : 1.0. CALCULUS: Limits and Continuity 1.1. Definition of a limit 1.2. Algebra of limits 1.3. Standard limits 1.4. Limit at infinity and infinite limits 1.5. Continuity of a function at a point 1.6. Algebra of continuous functions 1.7. Continuity in interval 1.8. Continuity of some standard functions	Detailed Syllabus 1) Theorem on a limit of a sequence 2) Theorem on continuity in interval
2.0. Differentiation 2.1. Derivative using first principle 2.2. Rules of Differentiation 2.3. Derivatives of standard functions 2.4. Derivatives of logarithmic and exponential functions 2.5. Derivative of composite functions 2.6. Derivative of Inverse functions 2.7. Derivative of implicit and parametric functions 2.8. Second order derivatives	Proof of derivative using the first principle with the help of an example
3.0. Applications of Derivatives 3.1. Geometrical applications 3.2. Derivative as a rate of change measure 3.3. Approximations 3.4. Maxima and Minima	
4.0. Integration 4.1. Definition of an integral of a function 4.2. Integrals of some standard functions 4.3. Rules of integration 4.4. Indefinite Integration 4.5. Definite Integration	Solve problems on definite integration
5.0 Application of Definite Integrals 5.1. Area under the curve 5.2. Volume of solid of revolution	
6.0. Differential equations 6.1. Definition 6.2. Formation of differential equations 6.3. Solution of first order and first degree differential equations 6.4. Applications of differential equations	Solve problems on first order and first degree differential equations
7.0 Numerical Methods 7.1. Definition of various operators and relation between the operators 7.2. Interpolation methods 7.3. Numerical integration	
8.0. Mathematical Logic 8.1. Statements and logical connectives 8.2. Statement Pattern and Logical equivalence 8.3. Application of logic	
9.0. Geometry 9.1. Pair of straight lines passing & not passing through origin 9.2. Circle: definition, Tangent and Normal 9.3. Conic: Equation of Conics 9.4. Three Dimensional Geometry: Direction Cosines and ratios, Line, Plane	

10.0. Linear Programming Problems 10.1. Linear Programming Problems 10.2. Simplex Method	Solve problems on simplex method
11.0. Boolean Algebra 11.1. Boolean Algebra as an algebraic structure Algebra 11.2. Principle of Duality 11.3. Boolean function & switching circuits 11.4. Application of Boolean Algebra to switching circuits	State and explain the principle of duality

Elective - I - Business Economics – 1st year
(Subject Code – 9000012)

Theory	Practical
<p>Detailed Syllabus :</p> <p>1. Introduction to Economics –</p> <p>1.1 Meaning & Scope -</p> <p>1.2 Relevance of Economics to different disciplines - Economics & Management, Economics & Law- Economics and Humanities –</p> <p>1.3 Micro Economics and Macro economics</p>	<p>1) Prepare a project on usefulness of micro – economics.</p> <p>2) Prepare a project on usefulness of micro – economics.</p> <p>3) Conduct a GD on the importance of Micro Economics and Macro Economics</p>
<p>2. Macro Economics –</p> <p>2.1 Meaning, Definition and Features.</p> <p>2.2 Aggregates-Nature of Aggregates , problems of Aggregation.</p> <p>2.3 National Income, Meaning, Definition of National Income Different National Income Concepts</p> <p>2.4. Estimation of National Income – Methods and Difficulties</p>	<p>1) Prepare a PPT presentation on macro-economics, National Income and how it is computed and the difficulties in measuring National Income.</p> <p>2) Prepare a chart on the circular flow of National Income.</p> <p>3) Make a comparative study of closed economy and open economy.</p> <p>4) Conduct a case study of 5 individual families and find out the Disposable income to the individuals.</p>
<p>3. Determinants of Aggregates</p> <p>3.1. Aggregate Demand and their components</p> <p>3.2 Aggregate Supply and their components</p>	<p>Prepare a chart on the components of aggregate demand.</p> <p>Conduct a GD on Keynes theory of employment and principles of effective demand.</p> <p>Take 2 or 3 case studies on entrepreneurship and discuss to what extent they provide employment to people.</p>
<p>4. Money and Banking</p> <p>4.1 Meaning, definitions and functions of Money</p> <p>4.2 Commercial Banks: Meaning and Functions.</p> <p>4.3 Central Banks: Meaning and Functions.</p>	<p>Find out RBIs concept of money supply.</p> <p>A visit to various financial institutions.</p> <p>A visit to a rural bank, cooperative bank, commercial bank.</p> <p>A visit to the RBI Training college, NABARD OR IDBI</p> <p>Further For the first year the practical will consist developing familiarity with banking functions and will comprise Of</p> <p>what are different types of banking services, facilities, available to individuals/organizations? (to increase the financial literacy)</p> <p>how to open a bank account?</p> <p>different investments like – FD,MF</p> <p>facilities for financial inclusion</p>
<p>5 Public Economics</p> <p>5.1 Government Budget and the Economy Government Budget – Meaning and its components</p> <p>5.2 Types of Government Budget – Balanced, Surplus and Deficit.</p>	<p>Prepare a report on sources of revenue in the budget of local Government. Comment.</p> <p>Conduct of GD on last year’s government budget.</p> <p>Find out how a private budget/ finance differs from public budget/ finance</p> <p>Prepare hypothetical master budget for an imaginary company and discuss how you have allocated the funds for each department.</p> <p>Prepare a separate budget for production, personnel and administration, finance, marketing, advertising, etc.</p>
<p>6. International Trade</p> <p>6.1 Comparative cost principal of International Trade.</p> <p>6.2 Free trade Advantages, Disadvantages</p> <p>6.3 Protectionist trade advantages, Disadvantages</p>	<p>1) Collect data on India’s direction of trade</p> <p>2) Collect data on India’s trade Composition</p>

Theory	Practical
<p>Detailed Syllabus :</p> <p>7.1. Concepts of Economic Growth and Economic Development</p> <p>7.2 Indicators of Economic Development Monetary indicators</p> <p>7.3 Human Development indicators</p>	<p>1) To make a project on discrepancies in India's economic growth and development.</p> <p>2) Discuss the patterns of education among women in the post independence period.</p> <p>3) Collect information on Human Development Index for different Indian states.</p>
<p>8.0. Structural Changes in the Indian Economy since 1991.</p> <p>8.1 Economic reforms since 1991: Need and main features, Liberalization, privatization and Globalization. Their impact on Indian Agriculture, Industries and Service Sector.</p> <p>8.2 Economic Planning – Meaning and Objectives</p> <p>8.3 Achievements and Failures of 10th Five – Year Plan</p>	<p>1) Conduct a GD on the New Economic Policy, 19991 and its impact on the various sectors.</p> <p>2) Visit to Agricultural Produce Market Committee to study the price Fixation of agricultural commodities.</p> <p>3) Collection of market intelligence of agricultural commodities from newspaper and journals.</p> <p>4) A visit to a cottage industry, small scale industry, large scale industry.</p> <p>5) A visit to a MNC.</p> <p>Prepare an assignment on the WTO.</p>
<p>9.0. Current Challenges of Indian Economy</p> <p>9.1 Problem of Population Explosion in India Causes, Effects and Remedial Measures to remove these problems</p> <p>9.2 Problem of Poverty in India Causes, Effects and Remedial Measures to remove these problems</p> <p>9.3 Problem of Unemployment in India Causes, Effects and Remedial Measures to remove these problems</p>	<p>Conduct a GD on population explosion and its impact.</p> <p>Prepare a comparative chart on employment in India dusting the five year plans.</p> <p>Conduct a GD to find out measures for poverty alleviation.</p> <p>Make ppt presentation on population explosion, poverty, unemployment.</p>
<p>10.0. Infrastructural Development in India</p> <p>10.1 Transport and Communication,</p> <p>10.2 Energy,</p> <p>10.3 Health and Education</p>	<p>Prepare a project report on recent trends in communication.</p> <p>Prepare transport documents of trade namely goods forwarding note, lorry receipt, delivery challan, railway receipt, mates receipt, Bill of lading, airway bill, etc.</p> <p>Conduct case studies on different energy companies like Carin India, Power Corporation of India, Reliance Energy, Coal India ltd.</p> <p>Collect secondary data on health and education.</p>

**Elective - I - Business Economics – 2 nd year
(Subject Code – 90000012)**

Theory	Practical
<p>. Introduction Micro Economics – 1.1 Meaning, Definition ,Nature 1.2 Tools of Analysis, 1.3 Role of Assumptions</p>	<p>1) Conduct a GD on the usefulness of Micro economics 2) Prepare a PPT on the role of assumptions in Economics</p>
<p>Consumer Behaviour and Demand Analysis 2.1 Concept of Utility, Total and Marginal Utility, Law of Diminishing Marginal Utility. Law of Equi – marginal Utility. 2.2 Concept of demand, Types of demand, Determinants of Market demand, Law of demand. 2.3 Price elasticity of demand – Concept and Importance</p>	<p>1) Make a ppt presentation on U. TU, MU, Law of diminishing marginal utility and law of equi – marginal utility. 2) Conduct a GD to substantiate the point that consumer behaviour mainly depends on economic theories. 3) Conduct a case discussion on elasticity of demand. 4) A visit to a mall/ departmental store to study consumer behaviour.</p>
<p>Producer Behaviour and Supply Analysis. 3.1 Meaning of Supply 3.2 Market Supply 3.3 Determinants of Market Supply and Law of Supply.</p>	<p>1) Make a PPT differentiating total output, Stock and Supply concepts. 2) Make chart on law of supply with schedules and supply curve. 3) Prepare a project receipt on the Law of supply. 4) Conduct a case discussion on the elasticity of supply.</p>
<p>Forms of Market and Price Determination, 4.1 Perfect competition 4.2 Monopoly and Monopolistic Competition – Meaning and Features 4.3 Price Determination under Perfect Competition</p>	<p>1) Conduct a discussion on ‘prevalence of one price is the best test of perfect competition’ 2) A visit to various markets to study the competition. 3) Write a report on the features of buyers market and sellers market.</p>
<p>Factors of Production 5.1 Meaning and Features of Land as a factor of production, 5.2 Labour as a factor of production, 5.3 Capital as a factor of production, 5.4 Entrepreneur, Qualities and functions of entrepreneur.</p>	<p>1) A visit to SISI, DIC to study about entrepreneurship. practical will consist of: <ul style="list-style-type: none"> • Preparing a project report • How to start a business • Collecting information about Permission/ Licenses required from various government agencies/ authorities • Conducting proto type market surveys using the above statistical tools • Preparing questionnaires for different types of market surveys 2) Prepare a project report on how to start an industry with financial details. 3) Conduct an interview with successful entrepreneurs. 4) Prepare a questionnaire for entrepreneurs. 5) Find out the problems faced by informal sector labour and prepare a report.</p>

Section II	
6.1 Meaning, Scope and Importance of Statistics in Economics	<ol style="list-style-type: none"> 1) Analyze the charts and diagram various statistical reports. 2) Collect secondary data from journals, magazines and newspapers.
Collection and organization of data 7.1 Collection of data – primary and secondary 7.2 Methods of data collection – primary methods – Observation, Interview, Methods of secondary data – Census and sampling, Random sampling. 7.3 Organization of data – Census and sampling, Random sampling.	<ol style="list-style-type: none"> 1) Preparation of questionnaire for personal survey method, telephone interview and mail survey. 2) Select sample respondents and conduct socio – economic survey, marketing survey, etc. 3) Choose suitable sampling method to conduct the survey. 4) Classification of collected data, tabulation of data and analysis and interpretation of data.
Graphical presentation of Data 8.1 Tables – Components and Types 8.2 Graphs – Curves, Bar diagrams, 8.3 Pie – diagrams.	<ol style="list-style-type: none"> 1) Prepare a project report using statistical techniques, graphs, etc. 2) Prepare a bar diagram for the data collected. 3) Prepare pie charts.
Measures of Central Tendency 9.1 Mean 9.2 Median 9.3 Mode	<ol style="list-style-type: none"> 1) Solve practical problems of mean, median, etc.

**Elective - I PHYSICAL BIOLOGY (Botany & Zoology) – 1st Year
(Subject Code : 90000013)**

Theory	Practical
<p>Detailed Syllabus : 1.0. General Biology 1.1. Definition and its concept 1.2. Living World: Nature and scope of Biology 1.3. Cell and Cell division: Structure of the cell, Cell division 1.4. Main features of life and its characteristics (Irritability, Homeostasis, Adaptations, Reproduction and Growth & death. 1.5. Origin and evaluation of life 1.6. Theories of evaluation of life, origin of life, special creation, spontaneous generation, Abiogenesis, Evidences of organic evolution paleontological anatomical & embryological 1.7. Study of Tissues</p>	<p>Study of cells and tissues</p>
<p>2.0. Introduction to Botany 2.1 Origin, development and scope of Botany 1.2 Classification and its need 1.3 Nomenclature 1.4. Taxonomic Hierarchy 1.5. Five Kingdom system of classification 1.6. Two Kingdom system of classification 1.7. Thallophyta, Bryophyta and Pteridophyta 1.8. Gymnosperms, Angiosperms</p>	<p>Study of angiosperms and gymnosperms</p>
<p>3.0. Vegetative Morphology of plants 3.1. Root: Root System – types, modifications of root (storage roots, velaman roots, photosynthetic roots, respiratory roots, parasitic roots, nodular roots) 3.2 Stem: Characteristics and Functions of the stem Modifications of the stems (Aerial – Tendrils, Thorns, Hooks, Phylloclade, Tuberos stems, Bulbils: Sub Aerial – Runners, Stolons, Suckers, Offsets: Underground – Rhizome, Corm, Stem Tuber, Bulb) 3.3 Leaf: Parts and Functions (Types and Modifications of leaf base, stipule, petiole are excluded) Venation Types of leaves (simple and compound) Phyllotaxy (alternate, opposite, Whorled) Modifications of leaves (tendrils, spines, scale leaves, Phyllode, reproductive leaves, trap leaves (details of Nepenthes only)</p>	<p>Study of the structure of a plant (root, stem, leaf)</p>
<p>4.0. Reproductive Morphology of plants 4.1. Inflorescence – Types (racemose, cymose, special) 4.2. Flower – Parts, Sex Distribution, Symmetry, Position of Gynoecium, detailed description of flower (perianth, calyx, corolla, aestivation, androecium – parts, fixation, dehiscence of anther, lengths of stamens, union of stamens), gynoecium – number of carpels, fusion of carpels (excluding variations under syncarpous), ovary – number of locules, placentation, types of styles, stigma.</p>	

<p>SECTION B - ZOOLOGY</p> <p>5.0. General Biology of Living world</p> <p>5.1. Main features of life and its characteristics (Irritability, Homeostasis, Adaptations, Reproduction and Growth & death.</p> <p>5.2. Origin and evaluation of life</p> <p>5.3. Theories of evaluation of life, origin of life, special creation, spontaneous generation, Abiogenesis, Evidences of organic evolution paleontological anatomical & embryological</p> <p>5.4. Study of Tissues</p>	
<p>6.0 Diversity of life</p> <p>6.1 Study and Classification of animals</p>	Classification of animals
<p>7.0. Genetics</p> <p>7.1. Chromosomal basis of inheritance</p>	
<p>7.0 Study of Phylum: Chordata</p> <p>7.1 General characters and out line classification of Chordata up to classes with typical examples.</p> <p>7.2 Fishes: Distinctive features of cartilaginous and Bony fishes with typical examples.</p> <p>7.3 Amphibia: Distinctive features of Urodela, Anura and Apoda with typical examples</p>	Study of amphibians
<p>8.0 Study of Reptiles, Aves and Mammals</p> <p>8.1 Reptiles: Distinctive characters of Squamata, Rhynchocephalia, Crocodilia and Chelonia with typical examples.</p> <p>8.2 Identification of Poisonous and Non- Poisonous Snakes, Poison apparatus, toxicity of Snake venom and treatment of snake bite including the first aid.</p> <p>8.3 Aves: Distintive features of Carinatae and Ratitae with typical examples.</p> <p>8.4 Mammals: Distinctive features of Prototheria , Metatheria and Eutheria.</p>	<p>1) Study of mammals</p> <p>2) study of reptiles</p>
<p>9.0 Anatomy of Earthworm</p> <p>9.1. General characteristics of earthworm</p> <p>9.2. Digestive and reproductive system</p> <p>9.3. Inter-relation of earthworm with mankind</p>	Study of earthworm

Elective - I PHYSICAL BIOLOGY (Botany & Zoology) – 2nd Year
(Subject Code : 90000013)

Theory	Practical
<p>Detailed Syllabus : SECTION A - BOTANY</p> <p>1.0. Reproduction in Angiosperms</p> <p>1.1 Introduction</p> <p>1.2 Microsporogenesis and development of male gametophyte</p> <p>1.3 Ovule – structure, types, megasporogenesis, development of embryo sac</p> <p>1.4 Pollination – Types, Contrivances of cross and self pollination. Agents of Pollination (definition with one example only)</p> <p>1.5 Fertilization: Post Fertilization changes including seed structure (dicot, Monocot) and types of germination (epigeal, hypogeal & vivipary – definitions with one example)</p>	<p>Detailed Syllabus</p> <p>Study of reproduction in angiosperms in details</p>
<p>1.6 Fruits: – Classification; false fruits, true fruits – simple (fleshy fruits – berry, pome, pepo, hesperidium, drupe: Dry fruits – dehiscent - legume, septicidal capsule, septifragal capsule, loculicidal capsule: Indehiscent – caryopsis, cypsela, nut: schizocarpic – lomentum, schizocarp), Aggregate and multiple fruits</p>	
<p>2.0. Plant Taxonomy</p> <p>2.1 Introduction – alpha and omega taxonomy , aspects of taxonomy, flora, herbaria, botanical gardens (RBG – KEW , IBG – Kolkatta, NBG – Lucknow), binomial nomenclature, ICBN, Types of classification, Units of classification, brief account of Bentham and Hookers classification</p> <p>2.2 Study of Malvaceae</p> <p>2.3 Study of Fabaceae</p> <p>2.4 Study of Solanaceae</p> <p>2.5 Study of Liliaceae</p>	
<p>3.0. Internal Organization of plants</p> <p>3.1 Tissues – Types (meristematic and permanent) and Functions</p> <p>3.2 Internal Structure of Dicot Root (Primary) and Monocot root</p> <p>3.3 Internal Structure of Dicot Stem (Primary) and Monocot stem</p> <p>3.4 Internal Structure of leaf (Dicot and Monocot)</p> <p>3.5 Secondary Growth in Dicot Stem</p>	<p>Study of monocot and dicot stem</p>
<p>4.0. Genetics</p> <p>4.1 Introduction to genetics</p> <p>4.2 Mendel’s Principles – Monohybrid, Dihybrid cross, Concept of probability in relation to Mendel’s laws</p> <p>4.3 Linkage and crossing over (only concept and significance)</p> <p>4.4 Mutations – gene and chromosomal (only definitions of terms: – spontaneous, induced, chromosomal structural and chromosomal numerical changes)</p>	<p>Mendel’s principle</p>

<p>SECTION B - ZOOLOGY</p> <p>5.0. Morphology of Humans</p> <p>5.1. Nutrition and respiration in man</p> <p>5.2. Locomotion in man</p> <p>5.3. Study of Human Skeleton</p>	<p>Study of human skeleton(Bone theory)</p>
<p>6.0 Physiology of Humans</p> <p>6.1. Circulation</p> <p>6.2. Osmoregulation and excretion</p> <p>6.3. Nervous co – ordination</p> <p>6.4. Hormonal co – ordination</p>	<p>1) Study of hormones</p> <p>2) study of circulation and excretion(diagrammatic chart)</p>
<p>7.0 Reproduction, growth and development</p> <p>7.1. Details of Reproduction and human development</p>	<p>Study of reproduction in humans</p>
<p>8.0 Biology in Human welfare</p> <p>8.1. Aquaculture: List of animals of aquacultural importance in Tabular form only</p> <p>8.2. Poultry: Poultry farming methods, Layers and Broilers, Poultry diseases (Bacterial,Viral and Fungal - Three each)</p> <p>8.3. Study of diseases: AIDS, Cancer, Typhoid</p> <p>8.4. Immunity system</p> <p>8.5. Biotechnology (Elementary aspects)</p> <p>8.6. Applications of Biology: Vermiculture and Fishery</p>	<p>Study of various diseases</p>

Elective - I - Subject Name : ENTREPRENEURSHIP – 1st Year

(Subject code : 90000014)

Theory	Practical
<p>Detailed Syllabus : 1.0. Entrepreneurship 1.1. Concept, Functions and need 1.2. Entrepreneurship: Characteristics and Competency 1.3. Relevance of Entrepreneurship to Socio-Economic Gain: generating National Wealth, creating Wage and Self -Employment, Micro, Small and Medium Enterprises, Optimizing Human and Natural Resource and Solving Problems in the path of prosperity, building enterprising Personality and Society. 1.4. Process of Entrepreneurship Development.</p>	<p>Detailed Syllabus I. Study visit by students to any enterprise of own choice. With the help of a schedule/questionnaire the students will record observation regarding – the background of entrepreneur, reasons for selecting the entrepreneurial career, starting the enterprise, the type of enterprise, the process of setting this enterprise, products/services, production process, investment made and marketing practices followed, profit or loss, growth and development, problems faced, institutions/organizations which offer support and entrepreneur’s level and type of satisfaction.</p>
<p>2.0. Entrepreneurial Pursuits and Human Activities: 2.1. Nature, Purpose and pattern of Human Activities: Economic and Non-Economic, Need for innovation. 2.2. Rationale and Relationship of Entrepreneurial pursuits and Human Activities.</p>	<p>II. Preparation of a brief report based on the observations made during study-visit to an enterprise.</p>
<p>3.0. Acquiring Entrepreneurial Values and Motivation 3.1 Entrepreneurial Values, Attitude and Motivation- Meaning and concept. 3.2 Developing Entrepreneurial Motivation and Competency – concept and process of Achievement Motivation, Self-efficacy, Creativity, Risk Taking, Leadership, Communication and Influencing Ability and Planning Action. 3.3. Barriers to Entrepreneurship 3.4. Help and support to Entrepreneurs</p>	
<p>4.0. Introduction to Market Dynamics 4.1. Understanding a Market 4.2. Competitive Analysis of the Market 4.3. Patents, Trademarks and Copyright</p>	
<p>5.0. Project Selection 5.1. Product Identification 5.2. Project Formulation</p>	

ENTREPRENEURSHIP – 2nd Year

Theory	Practical
<p>Detailed Syllabus : 1.0. Entrepreneurial Opportunities and Enterprise Creation 1.1. Sensing Entrepreneurial Opportunities 1.2. Environment Scanning 1.3. Market Assessment 1.4. Identification of Entrepreneurial Opportunities 1.5. Selection of an Enterprise 1.6. Steps in setting up of an Enterprise</p>	<p>Detailed Syllabus</p>
<p>2.0. Enterprise Planning and Resourcing 2.1. Business Planning – Preparation of a Project Report 2.2. Resource Assessment -Financial and Non – Financial. 2.3. Fixed and Working Capital Requirement, Funds, Flows, Profit Ratios, Break Even Analysis etc. 2.4. Mobilizing Resources – Sources and Means of Fund, Facilities and Technologies for starting an Enterprise.</p>	
<p>3.0. Enterprise Management 3.1. General management: Basic Management functions. 3.2. Organizing/Production of goods and services – quality, quantity and flow of inputs. 3.3. Managing Market: Meaning, Functions of Marketing, Marketing Mix: * Product * Price * Place * Promotion (advertising and sales promotion). 3.4. Managing Finance – Sources of Long Term and Short Term Finances, Determination of Cost, Income, Calculation of Profit/Loss. 3.5. Managing Growth and Sustenance -Affecting Change, Modernization, Expansion, Diversification and Substitution. 3.6. Entrepreneurial Discipline – Laws of Land, Ecology, Consumer’s Concept, Adherence to Contract and Credits.</p>	
<p>4.0. Industrial Relations and Personnel Management 4.1. Meaning, Source of recruitment, Internal/External recruitment procedure 4.2. Incentives, appraisal and training, Industrial relations, Industrial disputes.</p>	
<p>5.0. Report Writing 5.1. Guidelines 5.2. Model project reports</p>	

PRACTICAL (Second Year)

Introduction:

The Main objective of the course in Entrepreneurship is to generate in the students initiative, self reliance and enthusiasm so as to empower them to become entrepreneurs both in spirit and performance. A number of skills such as observation, evaluation, communication, resource mobilization and management, risk assessment, team building etc. is also to be developed in the students. Leadership qualities, sensitivity to business ethics and adherence to a positive value system are the core issues that the course highlights while presenting different concepts related to entrepreneurship.

Such a course should necessarily have a strong experiential component in the form of practical work. The objectives of the practical work are:

- 1 To introduce the students to the world of business by developing in them the core skills and competencies required for an entrepreneur.
2. To develop in the students qualities such as leadership, self-confidence, initiative, facing uncertainties, commitment, creativity, people and team building, integrity and reliability.
3. To enable the students to acquire the skills and knowledge needed for conducting surveys, collecting, recording and interpreting data and preparing simple estimates of demand for products and services.
4. To guide the students to prepare a Project Report.
5. To equip the students with knowledge and skills needed to plan and manage an enterprise through case studies conducted and recorded by the students in different fields such as resource assessment, market dynamics, finance management, cost determination, calculation of profit and loss etc.
6. To instill in the students important values and entrepreneurial discipline.

FORMAT

	Total marks: 30
1. Project Report/Survey Report	10 Marks
2. Viva-Voce on PW /SR	05 Marks
3. Case Study	10 Marks
4. Problem Solving	05 Marks

1. Project Report/Market Survey Report 10 Marks

a) Project Report:

Preparation of a Project Report for an enterprise involving products/services Students may be provided adequate guidance to choose a project based on their interests and availability of information and authentic inputs in the locality. The specimen proforma of project report given in the textbook may be used for preparing the report. However, mechanical preparation of the report by filling in the information in the proforma should be discouraged.

Further, as the students will be required to appear for a Viva-voce on the basis of their projects, sufficient care should be taken by the students to prepare the report after studying the various aspects involved thoroughly. In a nutshell, the project report should lead to viable enterprise.

b) Market Survey Report

Market research is the process and technique of finding out who your potential customers are and what they want. The survey may be on products and services already available in the market or students may also conduct surveys for new products and services. The report of the survey should be organised under the following broad headings :

1. Objectives.
2. Methods and tools (interviews ,questionnaires etc.) to be used to collect information.
3. Records of data and information.
4. Analysis of data and information.
5. Interpretation and conclusion.
For example, a survey may be conducted to find out the choice of households in toiletry soap, tooth paste etc. The data may be analysed to establish a pattern that may be useful to an entrepreneur.

Guidelines for assessment of Project Report / Survey Report

1. Presentation: Format, Clarity, Use of graphs, tables and other visuals, organisation, methodical recording of data and information and general neatness of execution. 5 marks
2. Originality and Creativity 3 marks
3. Authenticity of information and correctness of calculations and general feasibility of the project/ sustainability of conclusion drawn in the survey. 2 marks

2. Viva Voce on the Project /Market Survey Report

5 Marks

The questions should establish that the report is the original work of the student and that the student has a reasonably clear understanding of the work carried out by him/her. Entrepreneurial qualities such as leadership, self-belief, creativity, originality, initiative etc. may also be assessed by asking a variety of questions related to the report.

3. Case Study

10 marks

A case study is a focused research on an organisation, enterprise, practice, behaviour or person undertaken to highlight an aspect that the study attempts to examine. For instance, a case study may be conducted on the pollution control methods being employed by an industry. Or a successful industrialist may be chosen as a subject of a case study to analyze and understand the strategies that the industrialist adopted :to achieve success.

Ideally, a case study should be conducted on subjects with the objectives of bringing to the fore beliefs, practices, strategies, values etc. that have made them what they are. Such studies help us to understand the way in which great minds think and operate. We may also conduct case studies on failures; why a company collapsed, how a service lost its market etc. From both the types of case study, we learn lessons; how to do something or how not to do something. They also provide valuable insight into the processes involved in an enterprise.

A few topics are suggested for carrying out case studies :

- i) Drawing a profile of a successful entrepreneur.
- ii) Studying a public sector undertaking and highlighting its success/failure, by analyzing the factors responsible.
- iii) Studying a small scale unit in the locality to bring out the procedures and processes adopted by the unit to become a feasible business venture.
- iv) A study of competition in business by choosing two or more rivals in the market and analyzing their strengths and weaknesses.
- v) Take the school itself for a case study and analyze any two aspects of the school plant for chalking out a plan of action: infrastructure, academics, co-curricular activities etc.
- vi) A case study on a thriving fast food shop/restaurant in your locality. What makes it so popular?
- vii) A case study on the ways in which a business unit has mobilised its financial resources.
- viii) A case study on the enterprise management techniques adopted by a business house.

- ix) A case study on the marketing strategies of a successful consumer durable company.
- x) A case study on the financial management of a Public Limited Company.
- xi) A case study on any Specialized Institution that supports and guides the establishment of a small scale unit.
- xii) Studying the balance sheets of two big private companies to assess their trade and credit worthiness.
- xiii) Studying the inventory management of a large manufacturing industry to ascertain the processes involved for optimizing cost.
- xiv) Carrying out a case study on an established industrial house/company to find out the value system of the company and how it fulfils its social commitment/obligations.
- xv) Carrying out a case study on an established industry to ascertain the processes followed to reduce/prevent pollution.
- xvi) Study on environment friendly companies and their contribution to preservation.

Assessment of Case Studies

- i) Presentation: Format, accuracy, clarity, authenticity and general neatness 7 marks
- ii) Analysis and Conclusions 3 marks

4. Problem Solving

5 marks

In this session, the students will be required to solve a problem in the form of a written test. The examiner may choose any problem related to the units in class XII Text Book and set it for the class. The problem may be in the following areas :

- a. How to scan the environment to establish the feasibility of a project.
- b. Given certain figures showing the consumption pattern of a product, drawing conclusions that have a bearing on similar products.
- c. Carrying out market assessment for a given product/service to ascertain the feasibility factor.
- d. Assessment of Working Capital.
- e. Calculation of total cost of production.
- f. Calculation of break-even point.
- g. Determining location of a manufacturing unit.
- h. Problems in inventory control (calculation of the Economic Order Quantity and carrying out ABC analysis).
- i. Applying Pricing methods to determine the price of a product or service.
- j. Applying promotion mix to plan a sales campaign for a product or service.
- k. Working out a simple budget for a given task or job.

Assessment of Answers

The examiner may prepare five problems which are solved by him/her before they are presented to the students. The student may choose anyone of the problems and solve it, showing the different steps/different reasons involved in the solution. If the problem does not involve actual calculations, it may not have anyone correct answer. So weightage should be given not only to the final answer but to the entire process of problem solving that the student has followed.

Originality and innovative spirit should be rewarded. The students should not be penalized for pelling

errors, grammatical mistakes etc. as long as the answer is coherent. Where definite formulas are involved, accuracy should be given due weightage.

LIST OF SUGGESTED REFERENCE BOOKS

01. Entrepreneurship – Class XI – C. B. S. E., Delhi.
02. Entrepreneurship – Class XII- C. B. S. E., Delhi.
03. Udyamita (in Hindi) by Dr. M M.P. Akhouri and S.P Mishra, pub. by National Institute for Entrepreneurship and Small Business Development (NIESBUD), NSIC-PATC Campus, Okhla.
04. Trainer’s Manual on Developing Entrepreneurial Motivation, By M.M.P. Aukhori, S.P. Mishra and R. Sengupta, Pub. by (NIESBUD), NSIC-PATC Campus, Okhla.
05. Behavioral Exercises and games – manual for trainers, learning systems, by M. V. Despande, P. Mehta and M. Nandami.
06. Product Selection by Prof. H.N. Pathak, Pub. By (NIESBUD), NSIC-PATC Campus, Okhla.
07. Entrepreneurial Development – Dr. S. Moharana and Dr. C.R.Dash, Pub. by RBSA Publishers, Jaipur.
08. Entrepreneurial Development by S.S.Khanna, Published by S.Chand & Company Ltd., Ram Nagar, New Delhi.
09. Entrepreneurial Development by C.B. Gupta and N.P.Srinivasan, Publisher Sultan Chand & Sons, 1992.
10. Entrepreneurship Development – Principles, Policies and Programmes by P. Saravanel, Publishers Ess Pee Kay Publishing House, Madras.
11. Entrepreneurship, Growth and Development, by Rashi Ali, Pub. by Chugh Publication and Strech Road, Civil Lines, Post Box No. 101, Allahabad-211991.
12. Entrepreneur and Entrepreneurship Development and Planning in India, by D.N.Mishra, pub. by Chugh Publication, Allahabad.
13. Aoudhogik Disha Nirdesh (in Hindi) Pub. by Centre for Entrepreneurship Development, M.P. (CEDMAP), 60, Jail Road, Jhangerbad, Bhopal-462008.
14. Entrepreneur, Industry and Self-employment Project, Part-1 and 2(in Hindi), Pub. by Centre for Entrepreneurship Development, M.P. (CEDMAP), 60 Jail Road, Jhangerbad, Bhopal- 462008.
15. Small Scale Industry & Self-Employment Projects, Part-1 and 2 (in Hindi), Pub. by Centre for Entrepreneurship Development, M.P. (CEDMAP),60 Jail Road, Jhangerbad Bhopal.

Magazines

01. Udyamita Samachar Patra,(Monthly, Hind), Pub. by Centre for Entrepreneurship Development, M.P.(CEDMAP), 60 Jail Road, Jhangerbad, Bhopal-462008.
02. Science Tec. Entrepreneur (A Bi Monthly Publication), centre for Enterprenurship Development, M.P. (CEDMAP), 60 Jail Road, Jhangerbad , Bhopal -462008.
03. Laghu Udhyog Samachar.
04. Project Profile by DCSSI.
05. Project Profile by Pub. Centre for Enterpreurship Development, M.P. (CEDMAP), 60 Jail . Road, Jhangerbad, Bhopal-462008.

Elective - I - Subject Name : Psychology – 1st Year

(Subject code : 90000015)

Theory	Practical
<p>Detailed Syllabus :</p> <p>1.0. Psychology Introduction :</p> <p>1.1. Definition of Psychology</p> <p>1.2. Methods of Psychology</p> <p>1.3. Subfields of Psychology</p> <p>1.4. Schools of Psychology (a) Old (b) New</p>	<p>Detailed Syllabus</p> <p>I. Study until by student to any organization for differently able person with special needs or a centre for the treatment of the mentally ill. With the help of a questionnaire the student will record observation regarding the type of treatment given, different therapies available at the organization/centre, prognosis of the patients improvement in quality of life, support for previous care given to the patient/clients.</p>
<p>2.0 Memory</p> <p>2.1 A Theory of General Memory Function</p> <p>2.2 Information Processing Theories</p> <p>2.3 The Levels of Processing Theories</p> <p>2.4 The Organization of Long Term Memory</p> <p>2.5 Retrieval From Long term memory.</p> <p>2.6 Forgetting</p>	<p>II. Preparation of a brief report based on the observations made during case study-visit to an organization.</p>
<p>3.0 Learning</p> <p>3.1 Definition</p> <p>3.2 Classical Conditioning</p> <p>3.3 Instrumental Conditioning</p> <p>3.4 Escape Learning</p> <p>3.5 Avoidance Learning</p> <p>3.6 Signature of Instrumental Conditioning</p> <p>3.7 Cognitive Learning</p>	
<p>4.0 Motivation</p> <p>4.1 Definition</p> <p>4.2 Motives as References, Explanations and Predictions.</p> <p>4.3 Theories of Motivation</p> <p>4.4 A Normal of Biological Motivation</p> <p>4.5 Biological Motivation</p> <p>4.6 Social Motives</p> <p>4.7 Self-Actualization Motivation</p> <p>4.8 Frustration and Conflict of motives</p>	
<p>5.0 Personality</p> <p>5.1 Definition</p> <p>5.2 Theories of Personality</p>	
<p>6.0 Motivation</p> <p>6.1 Definition</p> <p>6.2 Etiology</p> <p>6.3 Diagnosis</p> <p>6.4 Clinical Features</p> <p>6.5 Treatment</p>	
<p>7.0 Perception and Attention</p> <p>7.1 Definition of Perception</p> <p>7.2 Sensory Processes</p> <p>7.3 Illusions</p> <p>7.4 Attention</p>	

8.0 Emotions 8.1 Definition 8.2 Expression and Perception of Emotions 8.3 Physiology of Emotions 8.4 Stress	
9.0 Intelligence 9.1 Definition 9.2 Intelligence Quotient (IQ) 9.3 Intelligence Testing	

Abnormal Psychology - 2nd Year

Theory	Practical
Detailed Syllabus : 1.0. Abnormal Psychology 1.1. Definition of Psychological Disorder 1.2. Classification of Psychological Disorder	Detailed Syllabus <p>The Main objective of the course in Psychology is to help the students establish a better rapport with their clients. A basic understanding and knowledge of this subject will enable the students to deal with each client as an individual, while also being aware of his/her unique needs. Also, due to the established mind-body connection, some patients requiring Physiotherapy have a Psychological cause as the basis of their physiological symptoms. Severe physiological symptoms requiring therapy can lead to psychological conditions in the patient. Relevant knowledge of psychology can help sensitize the physiotherapist to the needs of the client and treat the patient in a more holistic manner.</p> <p>Such a course would need to have an experimental component in the form of practical work. The objectives of the practical work are :-</p> <ol style="list-style-type: none"> 1. To give the students firsthand experience in field work with hospitals / centers catering to the psycho-physiological needs of patients. 2. To develop in the students the skill and sensitivity to deal with each patient as an individual with his or her own unique need. 3. To guide the students to prepare a project report. 4. To equip the students to make a note of patients psychological conditions in the case history of the patient. 5. To instill in the students the right values and a greater understanding of their patients.

<p>2.0 Schizophrenia</p> <p>2.1 Definition</p> <p>2.2 Symptoms</p> <p>2.3 Subtypes</p> <p>2.4 Treatment</p> <p>2.5 Prognosis</p>	
<p>3.0 Paranoia</p> <p>3.1 Definition</p> <p>3.2 Symptoms</p> <p>3.3 Subtypes</p> <p>3.4 Treatment</p>	
<p>4.0 Manic Depressive Psychosis</p> <p>3.1 Definition</p> <p>3.2 Symptoms</p> <p>3.3 Subtypes</p>	
<p>5.0 Melancholia</p> <p>5.1 Symptoms</p> <p>5.2 Treatment</p>	
<p>6.0 Anxiety</p> <p>6.1 Symptoms of anxiety</p> <p>6.2 Difference between normal fears and anxiety disorder</p> <p>6.3 Peripheral manifestations of pathological anxiety.</p> <p>6.4 Classification of anxiety disorder.</p> <p>6.5 Treatment</p>	
<p>7.0 Phobia</p> <p>7.1 Definition</p> <p>7.2 Symptoms</p> <p>7.3 Types of phobia</p> <p>7.4 Treatment</p>	
<p>8.0 Obsessive Compulsive neurosis (OCN)</p> <p>8.1 Definition of Obsession</p> <p>8.2 Definition of Compulsion</p> <p>8.3 Symptoms</p> <p>8.4 Treatment</p>	
<p>9.0 Hysterical Conversion Disorder</p> <p>9.1 Definition</p> <p>9.2 Clinical features (Symptoms)</p> <p>9.3 Treatment</p>	
<p>10.0 Neurasthenia</p> <p>10.1 Definition</p> <p>10.2 Symptoms</p> <p>10.3 Treatment</p>	
<p>11.0 Personality Disorders</p> <p>11.1 Definition</p> <p>11.2 Symptoms</p> <p>11.3 Classification / Types of Personality Disorders</p> <p>11.4 Anti-social Personality Disorder</p> <p>(i) Etiology</p> <p>(ii) Treatment</p>	
<p>12.0 Psychotherapy</p> <p>12.1 Definition</p> <p>12.2 Types of Psychotherapy</p>	

13.0 Organic Psychosis 13.1 Definition 13.2 Symptoms 13.3 Types of Organic Psychosis (i) Causes (ii) Clinical Features (iii) Treatment (iv) Course and Prognosis	
14.0 Alcohol Related Mental Disorders 14.1 Definition 14.2 Etiology 14.3 Classification 14.4 Treatment and Rehabilitation.	
15.0 Epilepsy 15.1 Definition 15.2 Varieties / Types of epilepsy 15.3 Cause of epilepsy 15.4 Aggravating factors 15.5 Post-ictal disorders 15.6 Epilepsy Vs. Pseudo-seizures 15.7 Status Epilepticus & treatment 15.8 Treatment of Epilepsy	
16.0 Mental Retardation (MR) 16.1 Definition 16.2 Classification 16.3 Etiology 16.4 Diagnosis 16.5 Clinical Features 16.6 Treatment	
17.0 Frustration and conflict 17.1 Definition of Frustration 17.2 Sources of Frustration 17.3 Types of conflict	
18.0 Mental Mechanisms 18.1 Classification	